

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

U.S. APPLICATION NO. (if known, see 15 CFR 1.5)

10/070224

INTERNATIONAL APPLICATION NO.

PCT/AU00/01009

INTERNATIONAL FILING DATE

25 August 2000

PRIORITY DATE CLAIMED

27 August 1999

TITLE OF INVENTION

PLANT AND PRODUCT TREATMENT

APPLICANT(S) FOR DO/EO/US

WATSON, Robert; GOODING, Matthew, Lenno; TULA, Henry, Joseph

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 19(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☒ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

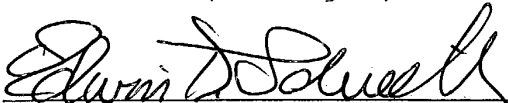
11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.

16. ☒ Other items or information:
 1. International Search Report
 2. International Preliminary Examination Report

"Express Mail" mailing label number ET 982571602 US

Date of Deposit February 27, 2002

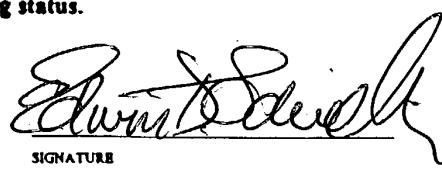
I hereby certify that this paper is being deposited with the U.S. Postal Service "Express Mail-Post Office to Addressee" service under 37 C.F.R. 1.10 on the date indicated above and is addressed to: Hon. Commissioner of Patents and Trademarks, Washington, D. C. 20231.



Edwin D. Schindler, Reg. No. 31,459

February 27, 2002

Date

17. <input checked="" type="checkbox"/> The following fees are submitted: Basic National Fee (37 CFR 1.492(a)(1)-(5)): Search Report has been prepared by the EPO or JPO..... \$830.00 International preliminary examination fee paid to USPTO (37 CFR 1.482)..... \$640.00 No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)).. \$710.00 Neither international preliminary examination fee (37 CFR 1.482) nor \$1,040.00 international search fee (37CFR 1.445(a)(2)) paid to USPTO..... \$950.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4)..... \$90.00 ENTER APPROPRIATE BASIC FEE AMOUNT =				CALCULATIONS PTO USE ONLY Rec'd PCT/PTC 27 FEB 2002	
ENTER APPROPRIATE BASIC FEE AMOUNT = \$ 1,040.00					
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)). \$ -0-					
Claims	Number Filed	Number Extra	Rate		
Total 16 Claims	16 -20 =	-0-	X \$22.00 \$ -0-		
Independent Claims	1 -3 =	-0-	X \$74.00 \$ -0-		
Multiple dependent claims(s) (if applicable)			+ \$230.00 \$ -0-		
TOTAL OF ABOVE CALCULATIONS = \$ 1,040.00					
Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28). \$ - 520.00					
SUBTOTAL = \$ 520.00					
Processing fee of \$130.00 for furnishing the English translation later the <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)). + \$ -0-					
TOTAL NATIONAL FEE = \$ 520.00					
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property + \$ -0-					
TOTAL FEES ENCLOSED = \$ 520.00					
Applicants qualify for Small Entity Status			Amount to be: refunded \$ charged \$		
a. <input checked="" type="checkbox"/> A check in the amount of \$**520.00 to cover the above fees is enclosed.					
b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.					
c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 19-0450. A duplicate copy of this sheet is enclosed.					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO: Edwin D. Schindler Five Hirsch Avenue P. O. Box 966 Coram, New York 11727-0966					
			 SIGNATURE Edwin D. Schindler NAME 31,459 REGISTRATION NUMBER		

SMALL BUSINESS

Applicant ~~xxx~~ ~~xxxx~~ ~~xxxxxx~~ Robert J. Watson et al.

Serial ~~xxxx~~ ~~xxxxxx~~ ~~xxxxxx~~ Patent No.: 10/070,224

Filed ~~xxxx~~ ~~xxxxxx~~ ~~xxxxxx~~ ~~xxxxxx~~

For: PLANT AND PRODUCT TREATMENT

Docket No.: _____

Examiner: _____

Art Unit: _____

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) and 1.27(c) - SMALL BUSINESS CONCERN

I hereby declare that I am:

☐ the owner of the small business concern identified below:

☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN: GLOBAL SPILL CONTROL PTY. LIMITED

ADDRESS: 16 Halsey Road, AIRPORT WEST, 3042, Victoria, AUSTRALIA

I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 13 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, DOES NOT EXCEED 500 PERSONS. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled _____

PLANT AND PRODUCT TREATMENT by
inventor(s) John Robert Watson, Matthew Lenno Gooding & Henry Joseph Kotula and described in:

☐ the specification filed herewith

☒ application serial no. PCT/AU00/01009, filed August 25, 2000

☐ patent no. _____, issued _____

If the rights held by the above-identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed below* and no rights to the invention are held by any person, other than the inventor, who could not qualify as a small business concern under 37 CFR 1.9(d) or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).
*NOTE: SEPARATE VERIFIED STATEMENTS ARE REQUIRED FROM EACH NAMED PERSON, CONCERN OR ORGANIZATION HAVING RIGHTS TO THE INVENTION AVERRING TO THEIR STATUS AS SMALL ENTITIES (37 CFR 1.27).

NAME: GLOBAL SPILL CONTROL PTY. LIMITED

ADDRESS: 16 Halsey Road, AIRPORT WEST, 3042, Victoria, AUSTRALIA

☐ INDIVIDUAL ☒ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

☐ See attached sheet for additional person(s), concern(s), or organization(s).

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING: Robert John Watson

TITLE: Director

ADDRESS: 73 Stintons Road, PARK ORCHARDS, 3114, Victoria, AUSTRALIA

SIGNATURE: 

DATE: Dec. 10, 2002

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: ROBERT J. WATSON ET AL. ART UNIT:

SERIAL NO.: 10/

EXAMINER:

FILED:

P.C.T. APPLICATION NO.: PCT/AU00/01009

P.C.T. INTERNATIONAL FILING DATE: AUGUST 25, 2000

PRIORITY CLAIMED: AUGUST 27, 1999

U.S. NATIONAL FEE PAID: FEBRUARY 27, 2002

TITLE: PLANT AND PRODUCT TREATMENT

PRELIMINARY AMENDMENT

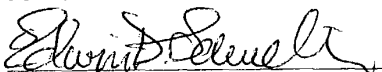
Hon. Commissioner for Patents
United States Patent and Trademark Office
Box PCT
Washington, D. C. 20231

Dear Sir:

Prior to an examination on the merits of the above-
identified patent application, please amend the above-
identified application as follows:

"Express Mail" mailing label number ET 982571602 US
Date of Deposit February 27, 2002

I hereby certify that this paper is being deposited with the
U.S. Postal Service "Express Mail - Post Office to Addressee"
service under 37 C.F.R. §1.10 on the date indicated above and
is addressed to: Hon. Commissioner for Patents, United States
Patent and Trademark Office, Washington, D. C. 20231.



Edwin D. Schindler, Reg. No. 31,459

February 27, 2002
Date

IN THE ABSTRACT OF THE DISCLOSURE

Please use the accompanying Abstract of the Disclosure, which is contained on a separate sheet of paper, as required by 37 C.F.R. §1.72(b), as the Abstract for the instant patent application.

IN THE SPECIFICATION

Please amend the Specification follows:

Page 1, between lines 1-2 (immediately beneath the Title of the Invention), insert the following headings:

--BACKGROUND OF THE INVENTION--; and,

--Technical Field of the Invention--;

between lines 5-6, insert the following heading:

--Description of the Prior Art--;

Page 2, between lines 14-15, insert the following heading:

--SUMMARY OF THE INVENTION--.

Page 3, above line 1, insert the following heading:

--DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS--.

IN THE CLAIMS

Please cancel Claims 1-16, and substitute the following claims therefor:

--17. A synergistic mixture for treating plant and plant products, comprising:

a citrus agent; and,
caprylic acid.

18. The synergistic mixture according to Claim 17, wherein is made of a product resulting from grinding a dried residue of squeezed citrus.

19. The synergistic mixture according to Claim 18, wherein active bioflavoids are obtained from said product resulting from grinding a dried residue of squeeze citrus by being dissolved therein.

20. The synergistic mixture according to Claim 17, further comprising:

said citrus agent	30% - 60%
caprylic acid	10% - 30%
an alcohol	10% - 30%
a surfactant	5% - 15%.

21. The synergistic mixture according to Claim 20, wherein said citrus agent is cytrosan, and said mixture comprises:

cytrosan	44.4%
caprylic acid	22.2%
an alcohol	22.2%
a surfactant	11.1%

22. The synergistic mixture according to Claim 17, further comprising a micro-nutrient.

23. The synergistic mixture according to Claim 22, wherein said micro-nutrient is an NPK, said NPK being a mixture of nitrogen, phosphorus, potassium and trace elements.

24. The synergistic mixture according to Claim 23, wherein said nitrogen, phosphorus and potassium are in a ratio of 10:20:10.

25. The synergistic mixture according to Claim 22, wherein said micro-nutrient includes trace elements.

26. The synergistic mixture according to Claim 22, wherein said a citrus agent and caprylic acid, in combination with one another, is in the order of 5 ml to 20 ml per one liter of said micro-nutrient.

27. The synergistic mixture according to Claim 26, wherein said micro-nutrient is an NPK, said NPK being a mixture of nitrogen, phosphorus, potassium and trace elements.

28. The synergistic mixture according to Claim 27, wherein said nitrogen, phosphorus and potassium are in a ratio of 10:20:10.

29. The synergistic mixture according to Claim 28,

wherein said mixture is made for use in a spray form.

30. The synergistic mixture according to Claim 22, wherein said mixture is made for use in a spray form.

31. The synergistic mixture according to Claim 17, wherein said mixture is made for use in a spray form.

32. The synergistic mixture according to Claim 31, wherein said spray form is diluted with 0.25 ml to 1.5 ml per liter of water.--

REMARKS

Prior to an examination on the merits of the above-identified patent application, please enter the foregoing amendments.

Claims 17-32 are now pending in the above-identified patent application, as presented by the instant Preliminary Amendment. Claim 17 is the single claim presented in independent form.

The present application represents the U.S. National Phase of P.C.T. Application No. PCT/AU00/01009, filed August 25, 2000, and claiming foreign priority on the basis of a corresponding Australian patent application, filed August 27, 1999.

By the present amendment, original Claims 1-16 have

ABSTRACT OF THE DISCLOSURE

A mixture of a citrus agent which contains, for example, a bioflavenoid, and caprylic acid acts synergistically to treat plants by providing anti-bacterial and anti-fungal protection to plants. In a preferred embodiment, a micro-nutrient is added to the mixture to simulate plant growth, while continuing to provide the stated protection to plants.

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PLANT AND PRODUCT TREATMENT

This invention relates to a plant and product treatment and in particular to a treatment which acts as an anti-mildew and anti-fungal spray which also has anti-bacterial properties. The invention also provides, in association with such treatment a
5 synergistic treatment which encourages growth of plants.

Historically, plants and crops (hereinafter generally referred to as plants) have been treated by the use of traditional agri-chemicals many, of which have been found to have undesirable side-effects. As a result, there has been pressure, mainly from consumers, for a move towards safer and more "natural based" alternatives. This can
10 be attributed to;

A growing global trend towards the reduction of chemical and pesticide use

A push for more "Organic Produce"

Growing public concern's over what goes into our food

The introduction of tougher legislation either banning or severely restricting
15 the use of many existing chemicals

Growing public awareness to the effects of prolonged exposure or use of chemicals

In Europe, for example, Government's are providing incentives to growers who adopt more desirable practices. This new approach, which is established on a country
20 by country basis, is essentially a move as close as possible towards total organic production.

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It is known to use, as an anti-bacterial agent, products produced from citrus, specifically oranges, such as a product called Cytrosan (Trade Mark but there are other broadly similar products such as Citrex (Trade Mark)) and which can be considered to be a mixture of bioflavanoids or products made from different citrus fruit such as grapefruit. For convenience, we shall refer to these types of products as citrus agents.

Citrus agents are conventionally made from the residue of juice manufacture, skin, pulp and pips, and this residue is dried and then ground into a powder. If required, the product can be treated to remove the soluble material, largely the bioflavanoids, therefrom leaving the fibre as waste. The treatment to remove the soluble material may be by the use of glycerine in which the bioflavanoids are soluble.

Caprylic acid (which is also known as octanoic acid) is known as an anti-fungal agent.

Both the citrus agents and caprylic acid are quite expensive.

The object of the invention is to provide a new plant and product treatment which has anti-bacterial and anti-fungal actions which have not been achieved by either citrus agents or caprylic acid, and which can also preferably have anti-mildew and anti-viral properties.

We have found that the provision of a mixture of citrus agent and caprylic acid together with carriers, possibly alcohol, surfactant and water, provides a synergistic mixture which gives a better result than the use of either of the compounds alone when used to treat plant materials and plant products.

We have also found that when such a mixture is combined with a micro-nutrient (the use of which is known to assist in plant growth), the growth of plants is substantially enhanced over what would have been expected from each of the treatments alone.

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In a first aspect, the invention thus includes a synergistic mixture for the treatment of plant and plant products which includes both a citrus agent and caprylic acid.

We have found by using a mixture of the invention we can reduce considerably the quantity of citrus agent needed to give a required end result and use only a small
5 quantity of caprylic acid, which is also expensive, to provide a treatment which is very much cheaper than previously available using these compounds separately to provide the results required.

In a second aspect of the invention, we add to the mixture as described above, a micro-nutrient.

10 The micro-nutrient may come from the class of materials known as NPK's, substances which are a mixture of nitrogen, phosphorus and potassium together with trace elements.

The invention also includes a method of treating plants against bacteria and fungus by spraying these at least once during the growing season with the mixture of a citrus
15 agent and caprylic acid.

Also included in the invention is such a method wherein a micro-nutrient is added to or sprayed with the mixture.

In order that the invention may be more readily understood we shall describe particular embodiments of the invention.

20 In the first embodiment we use a mixture formed as follows:-

citrus agent	30-60%
caprylic acid	10-30%
alcohol	10-30%
surfactant	5-15%

25

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In a specific mixture which we have used and from which we have had very good results, we use:

	Cytrosan (a specific citrus agent)	44%
5	caprylic acid	22%
	alcohol	22%
	surfactant	11%

This product we refer to as Croplife.

10 The mixture for use is diluted and we have found that when it is required for use against Downey and Powdery mildew the dilution can be very high. We have found that between 0.25 and 1.5 ml per litre of the mixture added to make up 100 litres provides a satisfactory dilution and 500 litres of this mixture provides good coverage for one hectare.

15 For golf course fungi we have found a dose rate of one litre of the mixture in 100 litres of water, 10ml/litre, is satisfactory.

For fungi found during mushroom production we use a mixture of 3-4 ml per litre of water.

We have effected field trials in mushrooms, grapes, grasses, apples pears mangos potatoes and tomatoes, all with effective results.

20 We have found that we have had positive results against three specific fungi, *Verticillium fungicola* var. *fungicola* (dry bulb), *Mycogone perniciosa* (wet bulb) and *Cladobotryum dendroides*, formally "*Dactylium dendroides*" (Cobweb), which have developed a mutagenic resistance to conventional fungicides.

The synergistic mixture of the invention satisfactorily killed these fungi.

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In the vineyards we used the product against the fungus *Botrytis* (*Botrytis cinerea*) and the mildews, Downey Mildew (*Plasmopara viticola*) and Powdery mildew (*Uncinulanecator*) and the product has been successful against these.

The product has been used in grasses and has successfully been used against the following fungi:

Fusarium acuminatari

Brown Spot (*Rhizoctonia*)

Dollar Spot (*Sclerotinia homoeocarpa*)

Fairy Ring (*Agraricales & Gastromycetale*).

Tests against bacteria have also provided satisfactory results and amongst bacterias tested are:

Pseudomonas

Erwinia

Anthraxnose

These tests have also shown that the product appears to be a systemic, that is that a certain percentage of the product will be taken up by the plant through both the leaves and roots and its effectiveness will be retained for some time.

Not only have we tried the product on the plants and fruit whilst being grown, we also found that the product can also be valuable post-harvest by dipping or spraying the product into a diluted mixture of the product and this has assisted the life of the harvested products. Where the product has been treated in the field before being treated post-harvest, the results have been enhanced.

Practically, we prefer that the product be applied to plants during the cool of the day, and preferably not prior to or just subsequent to rain. As the product is taken up by the leaves, it is better, if it is likely to rain within six hours to apply the product at a later time.

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Also, we have found that to obtain best results, the product can be sprayed in a light mist and the spray be repeated some five days after the first spray.

If, after a second spray, there is still signs of the infestation, the spraying can be repeated after a further five days.

- 5 We have found that the residues of the product components are not toxic, they are applied in only small quantities, both the citrus agent and the caprylic acid are natural products which are acceptable for use in food and, in any case, because of the low concentrations, the amount of residues is extremely small.

- 10 Whilst in the specification we have described particular certain applications and percentages of components and quantities applied, it is to be understood that these are exemplary of the invention and not restrictive.

- 15 The invention provides a treatment which is cheaper than using high percentage citrus agent as, because of the synergistic effect of the citrus agent and the caprylic acid, the quantity of citrus agent used is greatly reduced and whilst caprylic acid is itself quite expensive, it is used in such small quantities that the overall cost is minimised. There can be changes in the specific citric agent, the alcohol and the surfactant and where such changes are made, the proportions may have to be varied based on empirical information.

- 20 In the second aspect of the invention, we use the product described above together with a micro-nutrient (or nutritional solution).

These micro-nutrients themselves are known and one particular form "Growers" is an NPK product which includes nitrogen, phosphorus and potassium in a 10:20:10 ratio, together with a large number of trace elements. Growers and similar products are known as nutritional solutions. Whilst in the specific examples, we will refer to the

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use of Growers, it is to be understood that this is an exemplification of a class of known products.

The ratio of the two components can be varied depending on the particular application but, generally we suggest between 5 to 20 ml of Croplife to 1 litre of Growers but these proportions are not limiting.

Some qualitative results of the use of the mixture are as follows:

Apples and Pears - DONNYBROOK

Treated 1 hectare of Packham Pears and 1 Hectare of Royal Gala Apples with three treatments of Croplife and two treatments Growers Spray. Pears from the crop were stored in CA for 6 months with conventional DPA treatment. Product had very little rot and mould.

Potatoes - Ohio USA

Application rate 4 litres Growers/60ml Croplife per acre applied 6 times during season. Resulted in:

Better Sustained Growth.

No disease outbreaks.

Much improved yield.

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Tomatoes

This grower was able to compare the trial plot which comprised 4 acres against a traditionally treated plot and neighbouring plots.

Application Rate 4 litres Growers + 90ml Croplife per acre applied 4 times in season. Resulted in;

Reduction in traditional fungicides and fumigants.

Reduction in fertiliser used.

Reduction in disease (fungi).

Better product size.

Grower said advantage in using Croplife/Growers amounted to saving of USD550/acre over traditional farming with crop as good if not better.

Surrounding blocks under disease pressure.

Tomatoes - Greenhouse

Application rate of 2 tablespoons Growers + ¼ oz (7.5 mls) Croplife per 4 litres of water applied weekly. Resulted in;

Significant reduction in incidence of disease.

Better sized and greater volume of produce.

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Capsicum

Application rate of 4 litres Growers + 90ml Croplife/Acre applied four times per season.

Significant reduction in incidence of disease.

5 Better sustained crop.

Better yield.

Ornamentals - Mum's

10 Application rate of 2 Tablespoons Growers + ¼ oz (7.5mls) Croplife per 4 litres of water weekly.

Plants were essentially disease free.

Much better visible sustained growth.

Superior plant.

15

Soybean

Application rate of 6 litres Growers + 60ml Croplife/Acre every 2 weeks after plants were over 6" tall.

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Plants were shooting more suckers.

Generally healthier.

Crop loaded.

5

Grapes

Application rate of 4 Litres Growers + 60ml Croplife/Acre applied 4 times during season. Resulted in:

Significant disease reduction.

Healthier looking plant and product.

10

Expect yield increase will follow.

Wheat

Application rate of 12 litres Growers + 60ml Croplife per acre 3 times during season. Resulted in;

15

Dramatic yield increase of 13.5 Bushells/acre.

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Strawberries

Used as a transplant solution of 60mls Growers + 30ml Croplife per gallon with much improved transplant rate and noticeably more vigorous growth.

It can be seen from these results that, generally, not only were the plants healthier than would otherwise be the case but, also, all forms of infestation, bacterial and fungal appear to be controlled better than by the use of any of the components separately and the final plant was better and stronger than would have been expected to be the case using more conventional agri-chemicals.

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We claim:

1. A synergistic mixture for the treatment of plant and plant products which includes both a citrus agent and caprylic acid.
2. A mixture as claimed in claim 1 wherein the citrus agent is made from grinding the dried residue of squeezed citrus.
3. A mixture as claimed in claim 2 wherein active bioflavoids are obtained from the ground residue by being dissolved therefrom.
4. A mixture as claimed in any one of claims 1 to 3 wherein the mixture comprises:

citrus agent	30-60%
caprylic acid	10-30%
alcohol	10-30%
surfactant	5-15%
5. A mixture as claimed in claim 4 wherein the mixture comprises:

Cytrosan (a specific citrus agent)	44%
caprylic acid	22%
alcohol	22%
surfactant	11%
6. A mixture as claimed in any preceding claim to which there is added a micro-nutrient.

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7. A mixture as claimed in claim 6 wherein the micro-nutrient is from the class of materials known as NPK's, substances which are a mixture of nitrogen, phosphorus and potassium together with trace elements.
- 5 8. A mixture as claimed in claim 3 wherein the nitrogen, phosphorus and potassium are in the ratio of 10:20:10.
9. A mixture as claimed in either of claim 7 or claim 8 wherein the micro-nutrient also includes trace elements.
- 10 10. A mixture as claimed in any one of claims 7 to 9 wherein there is of the order of 5 to 20 ml of the product of claims 1 to 6 to one litre of the micro-nutrient of claims 7 to 9.
- 15 11. A method of treating plants against bacteria and fungus by spraying these at least once during the growing season with the mixture of any one of claims 1 to 6.
12. A method as claimed in claim 11 wherein the mixture is diluted before
20 spraying,
13. A method of claim 12 wherein the dilution lies within the range of 0.25 ml to 1.5 ml per litre of water.
14. A method as claimed in claim 13 wherein the resultant liquid is sprayed at
25 the rate of the order of 500 litres per hectare.

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15. A method as claimed in any one of claims 11 to 14 wherein a micro-nutrient is added to or sprayed with the mixture of any one of claims 1 to 5.
- 5 16. A method as claimed in claim 15 wherein the mixture including the micro-nutrient is as claimed in any one of claims 7 to 10.

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ance Notes on Codes and Abbreviations" appearing at the begin-
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(54) Title: PLANT AND PRODUCT TREATMENT

(57) Abstract: The invention relates to a mixture of a citrus agent which contains bioflavonoids and caprylic acid which act syn-
ergistically to treat plants to provide anti-bacterial and anti-fungal protection to the plants. The invention also provides the use of
this mixture together with a micro-nutrient to generally stimulate plant growth whilst at the same time providing protection. The
invention also provides methods of treating plants with the mixtures set out above.

WO 01/15536 A1

Declaration and Power of Attorney For Patent Application**English Language Declaration**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

PLANT AND PRODUCT TREATMENT

the specification of which

(check one)

☐ is attached hereto.

☒ was filed on August 25, 2000 ss

P.C.T. Application Serial No. PCT/AU00/01009

and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56 (a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
PP2483	Australia	27/08/1999	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
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_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
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(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

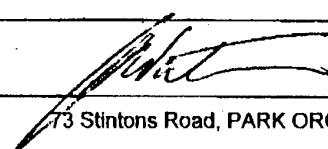
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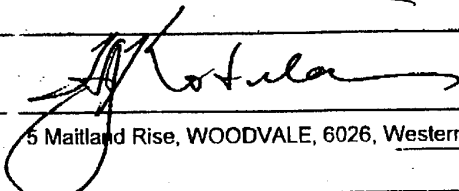
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Citizenship	AUSTRALIAN	
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Declaration and Power of Attorney For Patent Application

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PLANT AND PRODUCT TREATMENT

the specification of which

(check one)

☐ is attached hereto.

☒ was filed on August 25, 2000 as

P.C.T. Application Serial No. PCT/AU00/01009

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Page 2 of 2

(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

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MATT GOODING

PAGE 03

Page 3 of 3

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Citizenship	AUSTRALIAN
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